

Case 4:05-cv-00329-GKF-PJC Document 1921-7 Filed in USDC ND/OK on 03/23/2009 Page 1 of 6
Feb. 13. 2009 12:56PM Tulsa World 4092262409 No. 3101 P. 2

MEMORANDUM

Environmental protection unit

TO: Tom Gruber

FROM: Dan Lennington and Trevor Hammons

DATE: February 9, 2009

RE: Country Cottage Groundwater Investigation

Introduction

The purpose of this memorandum is to provide an update concerning the EPU's investigation of a possible link between the land application of poultry waste and the August 2008 *E. coli* outbreak at the Country Cottage in Locust Grove, Oklahoma.

Background

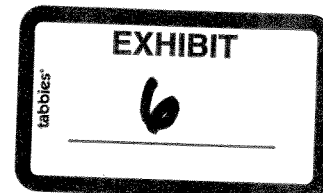
The Country Cottage is a buffet-style restaurant in Mayes County, Oklahoma, just north of the town of Locust Grove. On August 22, 2008, the Oklahoma State Department of Health (OSDH) learned of a possible *E. coli* outbreak among the restaurant's patrons. The outbreak continued for many weeks and ultimately resulted in 314 known cases, 72 in-patient hospitalizations, and one death. OSDH has never identified a source of the outbreak, other than stating that *E. coli* was the cause of the illnesses, and that the victims came into contact with *E. coli* while eating at the restaurant.

During its investigation, OSDH did not find *E. coli* anywhere in the restaurant. OSDH and the Department of Environmental Quality (DEQ) did, however, find *E. coli* in the restaurant's well. During a loss of pressure in the city water supply, the restaurant used groundwater from the well in food preparation during the weekend of August 10th. Restaurant patrons with confirmed and suspected cases of *E. coli* dined at the restaurant shortly after the well was put in use.

Starting in September 2008, EPU initiated an investigation to discover whether bacteria from poultry waste could have contaminated the well. The investigation included the collection of groundwater samples from the Country Cottage and other nearby wells, a review of poultry records and aerial photos, several site visits, interviews with witnesses and government officials, and consultations with the State's expert witnesses from the Oklahoma Poultry Litigation.

Factual Findings

EPU concluded its investigation in January 2009. EPU learned the following facts:



1. The location of the Country Cottage well is within a mantled karst terrain, which provides the easy transport of surface contaminants to groundwater, and easy transport of contaminants within the groundwater itself.
2. Within a six mile radius of the Country Cottage well there are 49 active poultry houses that have the capacity to produce 12,000,000 birds a year and 10,000 tons of waste.
3. There is insufficient pasture land to properly dispose of 10,000 tons of waste annually in the vicinity of the poultry houses.
4. Poultry waste from these houses is typically land applied near the houses, including on many pastures within a few miles of the Country Cottage well.
5. Documents show that poultry waste may have been land applied as close as $\frac{1}{4}$ mile from the Country Cottage well.
6. A pathway exists connecting the poultry-waste-applied pastures to the Country Cottage well via the groundwater and mantled karst terrain.
7. The specific strain causing the outbreak, *E. coli* O111, has been found in poultry waste.
8. The Country Cottage well contained *E. coli* bacteria in August, September, October, and November 2008.
9. Samples taken from the Country Cottage well contain the poultry-specific *brevibacterium* (the "biomarker" identified through the PCR method).
10. Samples taken from the Country Cottage well contain a "strong" poultry signature (PCA method).
11. Wells in the immediate vicinity (within one mile) of the Country Cottage contain *E. coli*, poultry signature, and the poultry biomarker.
12. Septic systems and sewer lines in the area have been tested and are not the source of any human waste contribution to the groundwater in the vicinity of the Country Cottage well.
13. The Country Cottage Restaurant used well water in preparation of food on and around August 9th, 10th, and possibly later.
14. People who became ill dined at restaurant around August 10. The first laboratory-confirmed exposure was August 15, but according to OSDH, there were "probable" exposures between August 10th and August 15th.

Conclusions

Based on these factual findings, our experts have concluded that the Country Cottage well is, and has been, contaminated with poultry waste and associated bacteria, including *E. coli*. Because this well was used in food preparation around the time of the outbreak, it is possible that the well and its poultry-waste-contaminated groundwater was a source of the outbreak.

Meetings with State Agencies

After developing these conclusions and opinions with the State's expert witnesses, EPU began a process of communicating these conclusions to agencies,

including DEQ, OSDH, and the Oklahoma Department of Agriculture, Food & Forestry (ODAFF). Below is a short summary of the meetings with these agencies.

1. Oklahoma Department of Environmental Quality

Date: January 20, 2009

Location: DEQ, Oklahoma City

Attendees for DEQ: Martha Penisten (Acting General Counsel), Jon Craig (Director, WQD), Gary Collins (Director, ECLS), Richard McDaniel (Manager, ECLS), Rocky Amonette (Lab), Chris Armstrong (Lab), Sara Gibson (Legal), Gary Burnett (ECLS), Rick Austin (local Mayes County DEQ employee), Mark Hildebrand (WQD), Patrick Rosch (WQD)

Attendees for OAG: Dan Lennington, Trevor Hammons

Summary: On January 20, 2009, we met with representatives from DEQ, including their legal counsel and management-level employees from the Water Quality Division (WQD), Environmental Complaints and Local Services (ECLS), and the DEQ Laboratory. We explained our findings and conclusions. DEQ representatives were very interested in our findings and asked questions. We were able to answer all of their questions. They agreed that the Country Cottage well was contaminated with *E. coli* and the source of the *E. coli* was likely not a human source, because DEQ had tested the integrity of nearby sewer lines and septic systems. DEQ also expressed regret that OSDH had made public statements indicating that the well was not – and could not – be a potential source of the outbreak. DEQ agreed that the well could have been a source of the *E. coli* that caused the outbreak.

The only reservations expressed by DEQ were whether they had jurisdiction to address the problem. We explained to them that they have jurisdiction over public and private water supplies, which have been affected by the land application of poultry waste. Also, DEQ has general jurisdiction over pollution under 27A O.S. § 2-6-105. We then informed DEQ that we were meeting with the other agencies and would be getting back to them. DEQ volunteered to go with us to the meeting with OSDH. Overall, it was a very good meeting and our findings were considered seriously.

2. Oklahoma State Department of Health

Date: January 21, 2009

Location: OSDH, Oklahoma City

Attendees for OSDH: Dr. Michael Crutcher (Commissioner); Dr. Kristy Bradley (State Epidemiologist); Nick Slaymaker (General Counsel); Blake Bostic (Assistant

General Counsel); Rocky McElvany (Chief Operating Officer); Lisa Bennett-Webb (Public Information Officer); Teressa Madden (Epidemiologist)

Attendees for DEQ: Jimmy Givens (Acting Deputy Director); Richard McDaniel (Manager – ECLS)

Attendees for OAG: Dan Lennington, Trevor Hammons

On January 21, 2008, we met with representatives of OSDH. DEQ representatives also attended. We gave a detailed overview of our investigation. We explained our sampling and analytical results, including how our experts had ruled out humans and cattle as a source of the *E. coli* in the well, and that our experts had found poultry DNA and poultry signature in the well. We asked Dr. Kristy Bradley if the well is still considered a potential source of *E. coli*. She responded, “absolutely.” She then explained that although the first “laboratory-confirmed case” of *E. coli* exposure at the restaurant was August 15, 2008, OSDH believes that there were “probable” or “suspect” exposures to *E. coli* at the restaurant around August 9 and 10, when the well was first used in food preparation.

We had a very positive back-and-forth dialogue with OSDH regarding Country Cottage. Dr. Bradley confirmed that they had not identified the source of the contamination and had in fact looked at animal sources. Dr. Bradley expressed some reservations that poultry could be a source of *E. coli* O111 because the published literature suggests that this particular strain is more typically associated with cattle. We then shared with her two articles where researchers found *E. coli* O111 in poultry. We later emailed her several more articles showing a strong association between poultry waste and virulent strains of bacteria.

Dr. Bradley indicated that OSDH would be issuing a report concluding that they could not identify the precise source of the *E. coli* (other than the outbreak victims all ate food from the Country Cottage). She indicated that OSDH would be very interested in doing a study looking at feces from animals in the area (including cows and chickens) that might help determine the source of the outbreak. The only limitation on such a study is funding.

Overall, it was a very positive meeting with OSDH. They were very respectful and receptive to our investigation. They expressed a willingness to continue to look at the evidence that our investigation had uncovered. We promised to get them some information and informed them that we were meeting with ODAFF in the coming days.

After the meeting, we had a follow-up phone call with Dr. Bradley. Dr. Bradley again confirmed that the well was a possible source of the *E. coli* that caused the outbreak. She also said that she believes that it is “much more likely” that animals are the source of the *E. coli*, rather than humans.

3. Oklahoma Department of Agriculture, Food and Forestry

Date: February 3, 2009

Location: ODAFF, Oklahoma City

Attendees for ODAFF: Terry Peach (Commssioner); Larry Harden (General Counsel); Dan Parish (Director – Env. Management); Dr. Talkington (Lab Director, Veterinarian); Dr. Shirazi (contract hydrologist)

Attendees for OAG: Dan Lennington, Trevor Hammons

On February 3, 2009, we met with ODAFF to discuss our investigation of the Country Cottage *E. coli* outbreak. We explained why and how OAG was looking at the Country Cottage issue. We gave a detailed overview of all actions taken by this office over the last few months regarding the Country Cottage. We explained our sampling and analytical results, including how our experts had ruled out humans and cattle as a potential source of the well contamination, and that we had found poultry DNA and poultry signature in the well.

From the beginning of the meeting, we received numerous questions and comments that indicated that ODAFF was extremely skeptical of our investigation. Below, we have outlined each individual's expressed concern and comments. The comments are not necessarily in the order of the conversation.

Commissioner Peach said that had been "burned" by OAG in the past. Specifically, he stated that he "reluctantly" agreed to the sensitive watershed litter-hauling restrictions based upon our PCA and PCR science, which has now been "thrown out of court." He indicated that said he did not want to be burned again by OAG. He also said that OSDH had information suggesting that the *E. coli* outbreak was linked to a "Honduran" restaurant employee. This worker had recently returned from Honduras and is a suspected source of the contamination, according to Commissioner Peach. Commissioner Peach stated that OSDH had this information in their possession. Finally, Commissioner Peach expressed skepticism that OAG could ever prove that the poultry waste in the Country Cottage well came from a large-scale commercial poultry operation. He gave an example that the waste could have come from "an old lady spreading poultry litter on her garden."

Dr. Shirazi is ODAFF's part-time contract hydrologist. Larry Harden stated several times that Commissioner Peach would not take any administrative action unless Dr. Shirazi and Dr. Talkington both agreed that the action was based on good science. Dr. Shirazi said that we had no case based on the evidence presented. He said that the only way to prove that poultry waste contaminated the Country Cottage well was to (1) identify exactly where the poultry waste was land applied in the summer of 2008, (2) conduct field work to prove that poultry waste could infiltrate the surface and contaminate the groundwater below the pasture in that precise location, and (3) drill

several bore holes between the pasture and the well to prove that contaminants from the field could be transported to the Country Cottage well. Without this proof based on this field work, Dr. Shirazi said he would never believe that poultry waste contaminated the Country Cottage well.

Dr. Talkington expressed skepticism that the *E. coli* contamination could come from animal waste at all. He believed that this contamination came from human sources. He had no evidence to back up his claim, other than his belief that the majority of food-borne illnesses stem from human sources. He also expressed skepticism about Dr. Bradley at OSDH. We informed him that OSDH had told us that they were looking at possible animal sources, and in fact Dr. Bradley stated that the source of the *E. coli* was likely animal waste. Dr. Talkington scoffed at this suggestion.

Ag from us
In summary, in contrast to the other agencies' responses to our presentation, ODAFF's criticism was not constructive. ODAFF did not take our evidence seriously and made comments to us that can only be described as dismissive and disrespectful.

Further Action

At this point, it is necessary to determine whether the agencies will take any action at all. The land application season is fast approaching and bacteria-laden poultry waste will again be spread on the pastures surrounding Locust Grove. These land-application events pose a threat to the health and safety to those who drink untreated groundwater.

We believe the agencies have the authority and cause to take the following administrative actions:

1. An immediate ban on the land application of poultry waste in southern Mayes County.
 2. An investigation of potential sources of *E. coli* O111 in and around Locust Grove lead by OSDH, with coordination by ODAFF to provide access to poultry facilities.
 3. A survey of groundwater quality in and around Locust Grove lead by DEQ.
 4. A public information campaign to inform those who use private drinking water wells in eastern Oklahoma about the risk of contamination posed by local agricultural practices.
- Dept of Ag - no*

If the agencies will not take action, then we would recommend opening a dialog directly with the United States Environmental Protection Agency and the Centers for Disease Control. We would also recommend considering whether it may be appropriate for OAG to request a state or federal court to issue an injunction prohibiting the future land application of poultry waste in and around Locust Grove without treatment or composting.

DPL